

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. - 23. (Canceled)

24. (Currently Amended) A computer program, stored in a tangible storage medium, for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to:

configure an application programming interface as a data model describing quality-of-service contracts and quality-of-service adaptation paths as specified by quality-of-service aware mobile multimedia applications using said application programming interface, in order to manage quality-of-service and mobility-aware for managing network connections with other applications,

wherein a quality-of-service adaptation path defines an adaptation policy identifying quality-of-service specifications and allows quality-of-service changes, and

wherein said middleware is adapted

to negotiate with communication peers to generate adaptation paths,

to measure the actual quality-of-service, and

to solve any quality-of-service problem by deciding which of the possible adaptations

to perform.

25. (Previously Presented) The computer program according to claim 24,

wherein the adaptation paths are expressed as hierarchical finite state machines based on quality-of-service contexts.

26. (Previously Presented) The computer program according to claim 25,
wherein a quality-of-service context identifies an arrangement of quality-of-service specifications to be enforced throughout a given set of streams.

27. (Previously Presented) The computer program according to claim 25,
wherein the hierarchical finite state machines comprise controllable states in the context of streams at the lowermost level.

28. (Previously Presented) The computer program according to claim 25,
wherein quality-of-service synchronization is provided so as to ensure that some user's given constraints on quality-of-service are globally enforced throughout a given set of streams.

29. (Previously Presented) The computer program according to claim 24,
wherein the specification of the quality-of-service contracts comprises hysteresis parameters for the transition between quality-of-service states.

30. (Previously Presented) The computer program according to claim 24,
wherein the specification of the quality-of-service contracts comprises utility parameters defining user's perceived utility factors associated with the respective quality-of-service contract.

31. (Previously Presented) The computer program according to claim 24, further comprising executable instructions that cause a computer to

provide an application handler unit to offer said application programming interface for providing quality-of-service aware mobile multimedia applications with the possibility of managing network connections with other applications.

32. (Previously Presented) The computer program according to claim 31,

wherein the application handler unit registers requests for notification events from applications and generates such events whenever the corresponding triggering conditions occur.

33. (Previously Presented) The computer program according to claim 31,

wherein the application handler unit operates on the basis of a data model comprising streams, quality-of-service context, quality-of-service associations and adaptation paths modeled as hierarchical finite state machines.

34. (Previously Presented) The computer program according to claim 33,

wherein the application handler unit creates for each unidirectional stream an instance of a chain controller for handling data plane and quality-of-service control plane related issues.

35. (Previously Presented) The computer program according to claim 34,

wherein the chain controller compares the quality-of-service requirements of a user with actual values of monitored parameters and configures a chain of multimedia components accordingly.

36. (Previously Presented) The computer program according to claim 35,
wherein the chain controller creates and manages a transport service interface socket,
whereby said multimedia components directly exchange data through said transport service
interface socket.

37. (Previously Presented) The computer program according to claim 34,
wherein the chain controller monitors and controls the local resources required to process
the given stream by using resource managers.

38. (Previously Presented) The computer program according to claim 34, further
comprising executable instructions that cause a computer to
configure a quality-of-service broker for managing overall local resources by managing
the whole set of streams via the chain controllers.

39. (Previously Presented) The computer program according to claim 38,
wherein the quality-of-service broker manages system-wide resources via resource
controllers.

40. (Previously Presented) The computer program according to claim 38,
wherein the quality-of-service broker controls end-to-end quality-of-service negotiation
by using a session manager.

41. (Previously Presented) The computer program according to claim 38,
wherein the quality-of-service broker includes further functionality for downloading
plug-ins corresponding to a given version of a data model which can not be handled by the
application handler unit.

42. (Previously Presented) The computer program according to claim 41,
wherein the quality-of-service broker and the plug-ins are forming a quality-of-service
broker cluster.

43. (Previously Presented) The computer program according to claim 34,
wherein the application handler unit and the various instances of the chain controller are
forming an application handler cluster.

44. (Previously Presented) The computer program according to claim 42,
wherein the application handler cluster and the quality-of-service broker cluster are
included in one open distributed processing capsule.

45. (Previously Presented) The computer program according to claim 42,
wherein the application handler cluster and the quality-of-service broker cluster are
included in separate open distributed processing capsules.

46. (Previously Presented) The computer program according to claim 45,

wherein the application handler cluster being included in one open distributed processing capsule is installed on a given local node and the quality-of-service broker cluster being included in separate open distributed processing capsule is installed on a separate open distributed processing node, whereby a proxy quality-of-service broker is installed on the given local node.

47. (New) A computer program, stored in a tangible storage medium, for managing quality of service, the program representing middleware and comprising executable instructions that cause a computer to:

configure an application programming interface as a data model describing quality-of-service contracts and quality-of-service adaptation paths as specified by quality-of-service aware mobile multimedia applications using said application programming interface,

wherein a quality-of-service adaptation path defines an adaptation policy identifying quality-of-service specifications and allows quality-of-service changes, and

wherein said middleware is adapted to negotiate with communication peers to generate adaptation paths, to measure the actual quality-of-service, and to solve any quality-of-service problem by deciding which of the possible adaptations to perform in order to manage quality-of-service and mobility-aware for managing network connections with other applications.